Trend Study 17-23-97

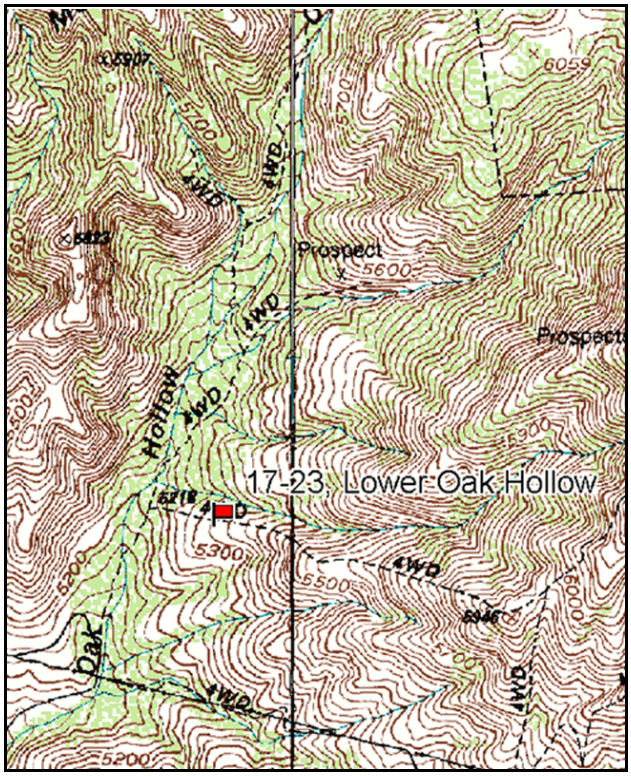
Study site name: Lower Oak Hollow. Vegetation type: Mixed Oak-Sage.

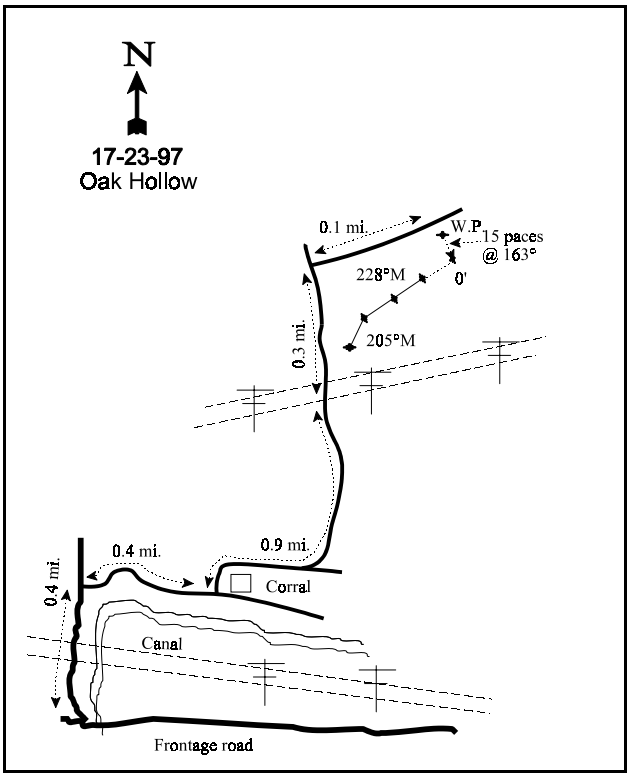
Compass bearing: frequency baseline 228 degrees magnetic (line 5 @ 205°M).

Frequency belt placement: line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

LOCATION DESCRIPTION

Beginning on the south side of the "Point of the Mountain", follow the frontage road to the road that leads to Oak Hollow. This road is right next to the gravel pit. Follow this road for 0.4 miles to a right turn. Take this turn (south) and go another 0.4 miles to a fork and a corral on the left. Take the left fork and go 0.9 miles to the powerlines. Go another 0.3 miles to a road on the right. Take this road for 0.1 miles to a witness post on the right. From the witness post, walk 15 paces at an azimuth of 163 degrees magnetic to the 0-foot stake. The study is marked by green, steel fenceposts approximately 12-18 inches in height.





Map Name: Jordan Narrows

Diagrammatic Sketch

Township 4S, Range 1E, Section 19

GPS: NAD 27, UTM 12S 4478540 N 425591 E

DISCUSSION

Oak Hollow - Trend Study No. 17-23

***SUSPENDED - This site was suspended in 2002. The entire area is being developed as part of the Traverse Ridge Development and access to the site is no longer possible.

In 1997 it was determined the original study site for Oak Hollow did not accurately represent the critical winter range that is present in this area. Therefore, the site was moved west of the original site to a small ridge sampling mountain big sagebrush and bitterbrush. Slope varies from 5% at the beginning of the ridge to 25% near the lower end. Aspect is southwest and elevation is approximately 5,400 feet. There is more wildlife use apparent on this site than on the original site.

Soil textural analysis indicates a sandy clay loam with a moderately acidic pH of 5.6. The effective rooting depth is nearly 17 inches with an average temperature of 54°F at this depth. At the 0 foot baseline stake there is a layer of clay about 12 inches below the soil surface, but this does not occur at any other stake down the line. Rock is common in the profile and about the size of a golf ball. Vegetative and litter cover are high at 44% and 67% respectively. There is very little bare ground present and no signs of recent erosion.

Mountain big sagebrush is the dominate browse specie with an estimated 4,480 plants/acre. This is a healthy population with nearly the same proportion of young and mature plants. Utilization of mature plants is light to moderate with only light hedging on the young plants. Average height and crown of the mature plants are 22 inches and 28 inches respectively. The dead to live ratio for mountain big sagebrush is 1:3. Some basin big sagebrush plants are scattered throughout the site and in some places it is difficult to distinguish between the two species. Many of the basin big sagebrush plants encountered were classified as dead. Broom snakeweed has an estimated density of 2,000 plants/acre with nearly 80% of the population classified as mature. Average height and crown are nearly one foot. Bitterbrush plants are large and scattered across the site. Estimated density is 260 plants/acre with 77% classified as mature. These plants are heavily hedged with some partly unavailable for hedging due to height. Surrounding slopes have discontinuous cover of Gambel oak which could provide good thermal and escape cover.

The dominate understory species is cheatgrass, which comprises 72% of the total vegetative cover. The cheatgrass cover is very dense and constitutes a fire hazard which would wipe out this critical winter range. Other annual grasses include Japanese brome and rattail fescue. Perennial species, such as Sandberg bluegrass, bluebunch wheatgrass, and intermediate wheatgrass, are scattered throughout the site. These species provide little cover or forage. Forb composition is diverse but many of the species are invader or increaser species.

1997 APPARENT TREND ASSESSMENT

Erosion is not apparent at this time on the site. Most of the protective ground cover comes from vegetation and litter from annual species. Erosion could become severe in the event of a high intensity storm or if there is a fire. The abundant cheatgrass litter provides very high amounts of fine fuel for a fire. The browse populations appear to be healthy and receive moderate utilization, apparently by deer. The sagebrush populations will likely suppress the broom snakeweed at this time. The herbaceous understory is dominated by cheatgrass. Perennial grasses are scattered and will likely have a tough time establishing further because of abundant winter annuals.

HERBACEOUS TRENDS --
Herd unit 17 , Study no: 23

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %
		'83	'89	'97	'83	'89	'97	'97
G	Agropyron dasystachyum	a1	b10	a-	1	4	-	-
G	Agropyron intermedium	-	-	7	-	-	2	.76
G	Agropyron spicatum	20	29	25	9	11	9	.82
G	Aristida purpurea	-	-	4	-	-	1	.03
G	Bromus japonicus (a)	-	-	85	-	-	26	1.12
G	Bromus spp.	-	-	59	-	-	19	.75
G	Bromus tectorum (a)	-	-	300	-	-	91	14.18
G	Festuca myuros (a)	-	-	30	-	-	12	.16
G	Poa bulbosa	a3	b51	a-	1	23	-	-
G	Poa fendleriana	a22	b44	a14	10	20	5	.36
G	Poa secunda	b127	a75	a82	49	34	33	1.29
G	Vulpia octoflora (a)	-	-	15	-	-	9	.31
Total for Annual Grasses		0	0	430	0	0	138	15.78
Total for Perennial Grasses		173	209	191	70	92	69	4.03
Total for Grasses		173	209	621	70	92	207	19.82
F	Achillea millefolium	b24	b20	a-	9	9	-	-
F	Agoseris glauca	a21	a11	b60	11	6	25	.32
F	Allium acuminatum	b119	b118	a-	53	49	-	-
F	Alyssum alyssoides (a)	-	-	19	-	-	9	.04
F	Ambrosia psilostachya	-	-	1	-	-	1	.03
F	Artemisia ludoviciana	b15	b17	a3	8	7	1	.15
F	Castilleja chromosa	-	-	1	-	-	1	.00
F	Cardaria draba	a-	a-	b17	-	-	6	.05
F	Calochortus nuttallii	a-	ab2	b6	-	1	4	.04
F	Cirsium spp.	-	-	4	-	-	2	.15
F	Collinsia parviflora (a)	-	-	41	-	-	16	.13
F	Crepis acuminata	-	-	3	-	-	1	.03
F	Cruciferae	-	-	5	-	-	4	.02
F	Cryptantha spp.	-	-	2	-	-	1	.00
F	Descurainia pinnata (a)	-	-	1	-	-	1	.00
F	Draba spp. (a)	-	-	64	-	-	25	.12
F	Epilobium brachycarpum (a)	-	-	170	-	-	72	2.91
F	Eriogonum cernuum (a)	-	-	27	-	-	10	.29
F	Erodium cicutarium (a)	-	-	135	-	-	56	1.87
F	Eriogonum racemosum	3	-	6	1	-	2	.06
F	Eriogonum umbellatum	-	-	1	-	-	1	.00
F	Galium aparine (a)	-	-	28	-	-	14	.31

Type	Species	Nested Frequency			Quadrat Frequency			Average Cover %
		'83	'89	'97	'83	'89	'97	'97
F	Grindelia squarrosa	-	1	1	-	1	1	.00
F	Helianthus annuus (a)	-	-	22	-	-	11	.10
F	Holosteum umbellatum (a)	-	-	101	-	-	42	.84
F	Hydrophyllum capitatum	6	-	-	3	-	-	-
F	Lappula occidentalis (a)	-	-	8	-	-	4	.04
F	Lactuca serriola	$_{a}$-	$_{a}$1	$_{b}$102	-	1	48	1.87
F	Lomatium dissectum	1	1	-	1	1	-	-
F	Microsteris gracilis (a)	-	-	18	-	-	10	.05
F	Montia perfoliata (a)	20	-	-	11	-	-	-
F	Petradoria pumila	-	-	4	-	-	2	.38
F	Phlox longifolia	$_{a}$-	$_{b}$18	$_{b}$31	-	9	14	.12
F	Polygonum douglasii (a)	-	-	104	-	-	48	.36
F	Ranunculus testiculatus (a)	-	-	14	-	-	6	.05
F	Sphaeralcea coccinea	-	-	3	-	-	1	.15
F	Taraxacum officinale	-	-	3	-	-	1	.03
F	Tragopogon dubius	$_{a}$-	$_{a}$5	$_{b}$123	-	3	55	1.13
F	Unknown forb-annual (a)	-	-	5	-	-	2	.06
F	Unknown forb-perennial	$_{a}$-	$_{a}$-	$_{b}$65	-	-	25	.81
F	Verbascum blattaria	$_{a}$-	$_{a}$-	$_{b}$8	-	-	4	.24
F	Vicia americana	$_{a}$-	$_{b}$86	$_{a}$-	-	34	-	-
F	Viola spp.	6	-	-	3	-	-	-
F	Zigadenus paniculatus	-	-	2	-	-	1	.00
Total for Annual Forbs		20	0	757	11	0	326	7.22
Total for Perennial Forbs		195	280	451	89	121	201	5.64
Total for Forbs		215	280	1208	100	121	527	12.86

Values with different subscript letters are significantly different at alpha = 0.10 (annuals excluded)

BROWSE TRENDS --
Herd unit 17 , Study no: 23

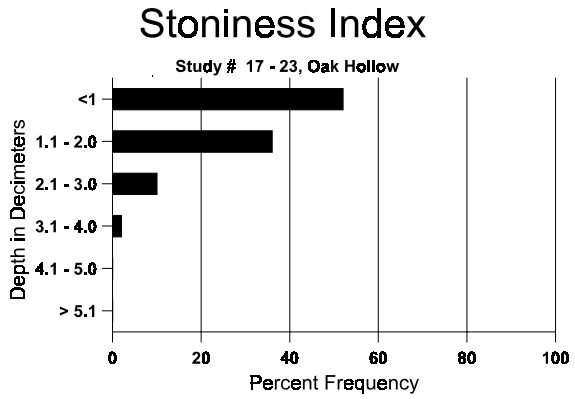
Type	Species	Strip Frequency	Average Cover %
		'97	'97
B	Artemisia tridentata tridentata	14	1.46
B	Artemisia tridentata vaseyana	75	9.55
B	Chrysothamnus nauseosus albicaulis	0	.00
B	Gutierrezia sarothrae	29	1.65
B	Purshia tridentata	11	2.95
B	Quercus gambelii	0	-
Total for Browse		129	15.62

BASIC COVER --
Herd unit 17 , Study no: 23

Cover Type	Nested Frequency '97	Average Cover % '83	'89	'97
Vegetation	376	.50	9.00	44.26
Rock	66	17.00	17.50	1.49
Pavement	75	1.75	4.00	.70
Litter	395	79.25	66.50	66.80
Cryptogams	68	1.00	0	1.00
Bare Ground	82	.50	3.00	1.58

SOIL ANALYSIS DATA --
Herd Unit 17, Study no: 23, Oak Hollow

Effective rooting depth (in)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
16.7	50.0 (17.2)	5.6	46.0	27.4	26.6	3.6	11.2	214.4	.4



PELLET GROUP FREQUENCY --
Herd unit 17 , Study no: 23

Type	Quadrat Frequency '97
Rabbit	3
Elk	5
Deer	49

BROWSE CHARACTERISTICS --
Herd unit 17 , Study no: 23

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia tridentata tridentata																		
S	83	-	1	-	-	-	-	-	-	-	1	-	-	-	66			1
	89	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	83	-	1	-	-	-	-	-	-	-	1	-	-	-	66			1
	89	4	-	-	2	-	-	-	-	-	6	-	-	-	400			6
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	83	1	15	7	-	-	-	-	-	-	23	-	-	-	1533	41	43	23
	89	4	4	-	-	-	-	-	-	-	8	-	-	-	533	33	26	8
	97	12	7	-	-	-	-	-	-	-	19	-	-	-	380	33	42	19
D	83	-	3	4	-	-	-	-	-	-	7	-	-	-	466			7
	89	5	5	-	-	-	-	-	-	-	9	1	-	-	666			10
	97	-	1	1	-	-	-	-	-	-	2	-	-	-	40			2
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	580			29

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	61%	35%	00%	-23%
'89	38%	00%	00%	-74%
'97	38%	05%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'83	2065	Dec:		23%
'89	1599			42%
'97	420			10%

Artemisia tridentata vaseyana																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	13	-	-	-	-	-	-	-	-	12	-	1	-	260			13
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	87	-	-	3	-	-	-	-	-	90	-	-	-	1800			90
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	65	30	9	1	-	-	-	-	-	105	-	-	-	2100	22	28	105
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	5	9	5	-	-	-	-	-	-	14	-	-	5	380			19
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	1540			77

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	00%	00%	00%	
'89	00%	00%	00%	
'97	18%	07%	02%	

Total Plants/Acre (excluding Dead & Seedlings)				
'83	0	Dec:		0%
'89	0			0%
'97	4280			9%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Chrysothamnus nauseosus albicaulis																		
M	83	2	-	-	-	-	-	-	-	-	2	-	-	-	133	43	13	2
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	15	11	0
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	1	-	-	-	-	-	-	-	-	-	1	-	-	66			1
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	00%	00%	00%	-50%
'89	00%	00%	00%	
'97	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'83	133	Dec:	0%
	'89	66		100%
	'97	0		0%

Gutierrezia sarothrae																		
S	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	7	-	-	-	-	-	-	-	-	7	-	-	-	140			7
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	21	-	-	-	-	-	-	-	-	21	-	-	-	420			21
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	7	-	-	-	-	-	-	-	-	7	-	-	-	466	11	9	7
	97	79	-	-	-	-	-	-	-	-	79	-	-	-	1580	11	12	79

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	00%	00%	00%	
'89	00%	00%	00%	+77%
'97	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'83	0	Dec:	-
	'89	466		-
	'97	2000		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Purshia tridentata																		
Y	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	1	-	-	-	-	-	-	-	1	-	-	-	20			1
M	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	89	-	2	-	-	-	-	-	-	-	2	-	-	-	133	20	51	2
	97	-	1	9	-	-	-	-	-	-	10	-	-	-	200	40	62	10
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	1	-	-	1	-	-	-	2	-	-	-	40			2
X	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	00%	00%	00%	
'89	100%	00%	00%	+49%
'97	15%	85%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'83	0	Dec:	0%
	'89	133		0%
	'97	260		15%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Quercus gambelii																		
S	83	31	-	-	-	-	-	-	-	-	27	-	4	-	2066			31
	89	12	-	-	-	-	-	-	-	-	11	1	-	-	800			12
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	83	49	-	-	-	-	-	-	-	-	49	-	-	-	3266			49
	89	59	20	-	3	-	-	-	-	-	82	-	-	-	5466			82
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	83	-	24	25	-	5	-	-	-	-	46	8	-	-	3600	35	26	54
	89	5	4	-	1	-	-	-	-	-	10	-	-	-	666	83	36	10
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0	56	59	0
D	83	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	89	2	3	-	-	-	-	-	-	-	3	1	-	1	333			5
	97	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'83	28%	24%	00%	- 6%
'89	28%	00%	01%	
'97	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'83	6866	Dec:	0%
	'89	6465		5%
	'97	0		0%